

REMARKS

Claims 1, 3, 5-8, and 10-14 remain pending in the application upon entry of this amendment. Claims 2, 4, and 9 are canceled herein. Favorable reconsideration in view of the amendments is requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-4 and 8-9

Claims 1-4 stand rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell, EP Patent Application Publication No. 0 028 067 (Totterdell) in view of Ohsugi et al., U.S. Patent No. 4,955,213 (Ohsugi). Claims 8 and 9 stand rejected as obvious over Totterdell in view of Ohsugi and a more tertiary reference.

With respect to independent claims 1, 3, and 8, the Examiner states that Totterdell discloses each and every element, except for a control portion that causes the water detection unit to detect the water level for a prescribed time period, and thereafter turns off the power supply. The Examiner further states that Ohsugi discloses a pressure switch which detects a water level in a washing tub (col. 3 lines 62-64), and a power source switch that is placed in the off condition after about five minutes from the finish of all washing processes in order to conserve energy (col. 6 lines 5-10). The Examiner concludes that it would have been obvious to combine the features of Totterdell with the switch control of Ohsugi to arrive at the claimed invention.

Applicants respectfully disagree. In one pertinent respect, the device of Ohsugi is comparable to the prior art discussed in the present application in relation to Fig. 11. Ohsugi states that the power source switch turns off power to the washing machine within a set time period after the washing operation has been completed to conserve energy. This aspect of Ohsugi is analogous to steps SA13-SA17 shown in prior art Fig. 11 of the application. Accordingly, although Ohsugi appears to teach an auto shutoff at the end of a wash cycle to conserve energy, Ohsugi does not teach, as claimed, that

water level detection is carried out upon the completion of the washing cycle to detect whether water remains in the water tank. Accordingly, a combination of Totterdell with the post-wash auto shutoff feature of Ohsugi does not result in or otherwise disclose the claimed invention.

Additionally, Ohsugi describes a situation in which an abnormal washing condition during the washing process is detected, and the power source switch causes an off condition after a predetermined time. (See, e.g., abstract). As exemplary abnormal washing conditions, Ohsugi describes detecting an abnormal (i.e., too little) water condition (col. 5 lines 10-33), or detecting that an abnormally excessive time for draining water is required during the rinsing operation (col. 6 lines 61-64). If either of these abnormal washing conditions is detected, then the power source switch triggers an auto shutoff within a predetermined amount of time.

With respect to this auto shutoff during washing, therefore, Ohsugi discloses only the monitoring of water conditions *during* the wash cycle. In contrast, independent claims 1, 3, and 8 recite that the control portion is configured to cause water level detection "when said operation for washing is *completed*" (emphasis added). (See, e.g., Figs. 7 and 8 of the present application in reference to step S8.) The Examiner appears to ignore this portion of the independent claims in the analysis. The present invention is concerned with detecting excess water in the machine after the wash cycle, whereas Ohsugi is concerned with detecting abnormal conditions during the wash cycle. As a result, a control portion that causes detection of the water level after the wash cycle is completed, as claimed, is lacking in the device of Ohsugi. Accordingly, a combination of Totterdell with the wash cycle auto shutoff feature of Ohsugi does not result in or otherwise disclose the claimed invention.

For at least these reasons, neither Totterdell nor Ohsugi discloses the claimed feature of a control unit that causes a water level detecting unit to detect the water level after completion of the washing operation for only a pre-described time period, and thereafter power supply to the control portion is turned off. A combination of the

devices of Totterdell and Ohsugi, therefore, also does not result in or otherwise suggest the claimed invention.

In this vein, claim 1, 3, and 8 have been amended to incorporate the features of claims 2, 4, and 9 respectively. Claims 2, 4, and 9 have been canceled. Claims 2, 4, and 9 each recite: "said prescribed time period is set in accordance with a time period calculated from a minimum flow rate of water fed from said water feed unit and a smallest amount of water detectable by said water level detecting unit." The incorporation of this feature into the independent claims further distinguishes the configuration of the control portion from the devices of Totterdell and Ohsugi. Indeed, the Examiner does not indicate that the characteristics associated with the prescribed time period, as recited in original claims 2, 4, and 9, are disclosed in the prior art.

Instead, regarding original claims 2, 4, and 9, the Examiner states that the claimed manner by which the prescribed time period is set does not require any additional structure, and therefore does not further limit the apparatus claims. Applicants respectfully disagree with the Examiner's conclusion. The claims recite a control portion that causes the water level detecting unit to detect the water level in the water tank only for a prescribed time period. Consequently, the control portion must be configured to include such time period. Furthermore, the claims recite a water feed unit that has a characteristic minimum flow rate, and that the level detecting unit has a characteristic smallest of amount of water detectable. These characteristics are determined by the structure of the water feed unit and water level detecting unit respectively. Accordingly, the manner by which the prescribed time period is set is in fact related to the structure recited in the claim, and thus is a part of the structure of the claim.

For at least these reasons, claims 1 and 3 are not obvious over Totterdell in view of Ohsugi, and claim 8 is not obvious over Totterdell in view of Ohsugi and the tertiary reference. The rejection of these claims, therefore, should be withdrawn.

Remaining Claims

The remaining claims stand rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell in view of Ohsugi and other tertiary references. The remaining claims each depend from either amended claim 1, 3, or 8, and therefore are patentable for at least the same reasons. The rejection of these claims, therefore, should be withdrawn.

Certain dependent claims are patentable for at least the following additional reasons. Regarding claim 5, the Examiner relies on Dirnberger et al., U.S. Patent No. 6,840,553 (Dirnberger) as allegedly disclosing the claimed lock unit (citing col. 4 lines 48-65). Dirnberger states generally that a machine door lock may be blocked when water in the washing machine has reached a level at which opening the door would permit water to escape. Dirnberger, however, does not disclose the additional feature of claim 5 that a control portion causes the lock unit to lock the door when the leakage detecting unit detects water leakage at the water feed unit.

Regarding claims 6-7 and 11-12, the Examiner further relies on Baubin, U.S. Patent No. 4,696,171 (Baubin) and Nakamura et al., U.S. Patent No. 5,000,015 (Nakamura). The Examiner states that Nakamura discloses a lock detecting unit (col. 13 lines 60-67). The lock detecting unit may detect whether the machine lid is faulty. The Examiner also states that Baubin discloses a pressure switch (level sensor) that indicates an overflow situation and causes water to drain from the wash tub (col. 11 lines 56-67). The Examiner states that it would have been obvious to use a leak detecting unit that detects a high water level that would tell the control portion to drain the water, in combination with a lock detecting unit. Applicants respectfully disagree. The level sensor of Baubin detects an overflow situation during the wash cycle, as in over filling the tub. It is not at all a "leakage detecting unit [that] detects a water leakage at said water feed unit", as claimed. Applicants submit that overflow detection and leakage detection are not sufficiently comparable to render claims 6-7 and 11-12 obvious.

Regarding claims 13-14, the Examiner indicates that Totterdell discloses a plurality of sensors to monitor the water level (page 5 lines 7-25). As is apparent from the disclosure of Totterdell, however, the sensors monitor and control filling and draining during the various components of the wash cycle. The sensors do not, "after the completion of said operation for washing", control the draining of water improperly remaining after the wash cycle, as does the control portion recited in claims 13 and 14.

For at least these reasons, the dependent claims are not obvious over Totterdell in view of Ohsugi and other tertiary references, and therefore the rejection of these claims should be withdrawn.

Conclusion

Accordingly, claims 1, 3, 5-8, and 10-14 are believed to be allowable, and the application is believed to be in condition for allowance. A prompt action to such end is respectfully requested.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below..

Respectfully submitted,

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